REMARKS

Claims 8, 10-27, 35-48, 50-52, 54-81, 83-93, and 95-132 are presented for examination, of which claims 36, 67, 79, 80, 92, 93, 97, 100, 129, and 130 are independent. Favorable reconsideration and further examination are respectfully requested.

The Examiner rejected claims 96-98, 113-120 and 129 under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement.

Independent claim 97 (and claims 96 and 98, which ultimately depend from claim 97), is directed to "[a] computer-readable medium that stores executable instructions for use at radio network controller...", while independent claim 129 (and claims 113-120, which ultimately depend from claim 129) is directed to "[a] computer-readable medium that stores executable instructions for use at a radio node...".

As disclosed in Applicants' specification, a radio network controller (RNC) is a server. A radio node (RN) is another network device. The following example passages from the specification make this clear.

IMPROVED CLIENT/SERVER ARCHITECTURE

...

> Each RN keeps a routing table for the mapping between the UATI and the serving RNC ...[1]

...

> Similarly, on the forward link, when a server module in the serving RNC has a MAC layer packet ready for transmission on the Control Channel of a particular sector, it first sends the packet to an I/O card in the serving RNC along with a Stream Identifier that includes the UATI of the receiving AT, the transmitting sector's SectorID (or a representation of it) and a MAC Index identifying the packet as a control channel packet. The I/O card in the serving RNC then uses the UATI value to determine the IP

[1] Applicants' Specification, at page 18, lines 20-21.

address of the RN to which to send the packet. It then encapsulates the MAC Layer packet together with its Stream Identifier in an IP packet whose destination address is set to the IP Address of the RN. The RN, upon receiving the packet, reads the SectorID value in the Stream Identifier to determine the sector that will transmit the packet. It then passes the MAC Layer packet along with the SectorID and MAC Index to the appropriate modem card. The modem card schedules the packet for transmission on the control channel.[2]

FAILURE RECOVERY & LOAD BALANCING

The client/server architecture described earlier can be further extended to increase the overall reliability of the wireless network. (Note, the RNC may be a carrier-class equipment with internal redundancy to handle failure of its various cards/modules....[3]

PACKET ROUTING BETWEEN RN AND RNC – IN MORE DETAIL

...

When a sector in the RN receives a MAC Layer packet on the access channel, it first reads the UATI in the ATI field of the MAC Layer Header and then forwards the packet to an I/O card after adding a Stream Identifier that includes the UATI of the sending AT along with the serving sector's SectorID. The I/O card in the RN again uses the UATI value to look up the IP address of the serving RNC. It encapsulates the MAC Layer packet together with its Stream Identifier in an IP packet whose destination address is set to the IP Address of the serving RNC. The I/O module in the serving RNC, upon receiving the packet, reads the UATI value to determine the server module that serves this session. It then passes the MAC Layer packet along with the Stream Identifier to that server module for further processing. ...[4]

In these examples, the "serving" RNC is part of "client/server architecture" and may include a "serving module" and an "I/O card". Similarly, the RN may include an "IP Address", a "routing table," and a "modem card." Therefore, both the RNC and RN are clearly identified in the specification to be parts of a client/server architecture that can

[2] *Id.*, at page 23, line 15 – page 24, line 4.
[3] *Id.*, at page 24, lines 6-9.
[4] *Id.*, at page 22, lines 13-25.

communicate with each other using MAC Layer packets. A person having ordinary skill in the art would understand the RNC, for example, to be a server, and, further, that the RNC may be a computer or computing device capable of reading and executing executable instructions stored on a computer-readable medium, such as memory. A person having ordinary skill in the art would understand that the RN may be a computer or computing device capable of reading and executing executable instructions stored on a computer-readable medium, such as memory. A person having ordinary skill in the art, would have general knowledge of computers and computing devices, and would likewise have general knowledge of computer-readable media, such as memory. Such a person would, based on the specification would be able to make and use the subject matter of claims 96-98, 113-120 and 129 with a minimum of experimentation. As such, the computer-readable medium claims are sufficiently enabled in the specification. Furthermore, Applicants contend that each and every feature in the claims in and of itself may enable one skilled in the art to make and use the subject matter of any claim including the feature. Thus, Applicants respectfully request reconsideration and withdrawal of these rejections.

The Examiner rejected claims 17, 36, 53, 67-69, 74, 78-81, 87, 91-94, 100, 110, 111, and 130 under 35 U.S.C. § 102(b) as being anticipated by Ziv. Noam A., International Publication Number WO 98/09460 ("Ziv"). The Examiner also rejected claims 96, 97, 113, and 129 as unpatentable[5] over Ziv in view of U.S. Patent No. 5,852,630 to Langberg at al. ("Langberg"). With respect to claim 113, the Examiner also rejected the claim further in view of an Official Notice. The Examiner rejected claims 102 and 121 under 35 U.S.C. § 103(a) as being unpatentable over Ziv in view of an Official Notice. The Examiner rejected claims 8, 10-27, 35, 37-44, 48, 50-52, 54, 56-66, 70-73, 75, 76, 83-86, 88, 89, 92, 93, 95, 98, 99, 101, 103, 105-107, 109, 112, 113, 122-125, and 128 under 35 U.S.C. § 103(a) as being unpatentable over Ziv in view of alleged

[5] The Office Action, dated September 16, 2008, listed this rejection as being under 35 U.S.C. § 102(b), but review of the Examiner's rejection makes clear that the Examiner intended to reject these claims under 35 U.S.C. § 103(a). See Office Action dated September 16, 2008, at pages 13-16.

admitted prior art. The Examiner also rejected claims 45-47, 55, 77, 90, 104, and 127 as being unpatentable over Ziv in view of the alleged admitted prior art and further in view of U.S. Patent 5,983,282 to Yucebay ("Yucebay"). The Examiner rejected claims 108 and 126 under 35 U.S.C. § 103(a) as unpatentable over Ziv in view of admitted prior art and further in view of U.S. Patent Application Publication no. 2002/0068570 to Abrol et al. ("Abrol"). The Examiner rejected claims 98 and 114-118 and 120 under 35 U.S.C. § 103(a) as unpatentable over Ziv in view of Langberg and further in view of the alleged admitted prior art. The Examiner also rejected claim 119 under U.S.C. § 103(a) as unpatentable over Ziv in view of Langberg and the alleged admitted prior art and further in view of Abrol. The Examiner further rejected claims 131 and 132 under 35 U.S.C. § 103(a) as unpatentable over Ziv in view of U.S. Patent No. 6,477,159 to Yahagi ("Yahagi").

Independent claim 36 recites:

> 36. (Previously Presented) A method comprising,
> enabling many-to-many communication among radio network controllers and radio nodes through a packet network,
> establishing a first session for a first access terminal on a first radio network controller through a first radio node, wherein the first session is established when the first access terminal is dormant, and
> maintaining the first session on the first radio network controller as the first access terminal moves from a coverage area of the first radio node to any portion of a coverage area of a second radio node through which a second dormant access terminal has a second session on a second radio network controller, wherein the first session is maintained when the first access terminal is dormant;
> wherein when the first access terminal is dormant, the first access terminal has the first session established on the first radio network controller and does not have any traffic channel established with any radio network controller; and
> wherein when the second access terminal is dormant, the second access terminal has the second session established on the second radio network controller and does not have any traffic channel established with any radio network controller.

Claim 36 recites, among other things, that when a first access terminal is dormant, the first access terminal has a first session established on a first radio network controller and does not have any traffic channel established with any radio network controller. When a second access terminal is dormant, the second access terminal has the second session established on the second radio network controller and does not have any traffic channel established with any radio network controller.

The independent claims all recite features that involve dormant access terminal(s). For example, claim 36 in particular includes the above language and also recites, among other things, "establishing a first session for a first access terminal on a first radio network controller through a first radio node, when the first access terminal is a dormant access terminal, on a first radio network controller through a first radio node, wherein the first session is established when the first access terminal is dormant". Another independent claim, claim 67, for example, recites similar language to that used in claim 36 and also recites, among other things, "enabling a radio node to simultaneously serve both a first access terminal and a second access terminal, the first access terminal having a first session established on a first radio network controller and the second access terminal having a second session established on a second radio network controller, the radio node being interconnected with the radio network controllers using a packet network, wherein the radio node is enabled to simultaneously serve both the first access terminal and the second access terminal when the first and the second access terminals are dormant". Yet another independent claim, claim 92, directed to a system, recites similar language to that used in claims 36 and 67 and also recites, among other things, the system "enabling the first access terminal to maintain a first session on the first radio network controller when the first access terminal moves from any portion of the coverage area of the radio node to any portion of a coverage area of another radio node through which a second access terminal of the at least two access terminals has a second session on a second radio network controller of the radio network controllers, wherein the first

access terminal is enabled to maintain the first session on the first radio network controller when the first access terminal is dormant."

Turning to the applied art, Ziv does not disclose or suggest any of the foregoing features of independent claims 36, 67, or 92. Ziv fails to disclose or suggest a first access terminal having a first session established on a first radio network controller when the first access terminal is dormant and does not have any traffic channel established with any radio network controller, as required by independent claims 36, 67, and 92.

Ziv is directed to routing calls in a mobile wireless telephone service. Ziv discloses a "simple packet router"[6] that deals with soft and hard handoffs.[7] Since Ziv does not disclose dormant access terminals, Ziv also does not disclose or suggest establishing or handing off sessions in a dormant state.

Ziv specifically discloses call routing with respect to established call connections:[8]

> Telephone calls are routed by base station transceiver subsystems 14A - 141 between remote unit 34 and base station controllers (BSC) 12A - 12C of system 30. Telephone calls may also be routed by base station transceiver subsystems 24A - 241 between remote unit 34 and base station controllers 22A " 22C of system 32. Base station controllers 12A - 12C and base station controllers 22A - 22C connect to mobile switching centers (MSC) 10 and 20, respectively.

The handoffs (soft and hard handoffs) disclosed in Ziv take place when calls are connected, and do not occur when there is no traffic channel established with any base station controller. Ziv further discloses:[9]

> Once a call has been established, it occupies a signal path from the PSTN through a mobile switching center and base station controller to at least one base station transceiver subsystem. The signal path may change **during** the call if the call is handed off between base station transceiver subsystems due to the movement of the remote unit within the system. If the system employs "hard" handoffs, the remote unit communicates with only one base station transceiver subsystem at a time. To support a hard handoff, a second

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[6] Ziv, at page 6, lines 12-13 ("Because it is a simple packet router, CDMA interconnect subsystem 26 does not add great expense or complexity to the system."); Fig. 2.
[7] *Id.*, at page 3, lines 26-37.
[8] *Id.*, at page 3, lines 19-24. *See also Id.*, at, e.g., page 3, lines 26-37; page 4, lines 12-15, 30-33; page 5, lines 13-15; page 6, lines 20-24.
[9] *Id.*, at page 3, lines 26-37 (emphasis added).

> fixed path is established to carry the call. If the system employs so-called "soft" handoffs, two or more paths are established simultaneously during the handoff process, thereby requiring multiple paths to be maintained through a plurality of base station transceiver subsystems until the soft handoff is complete.

Thus, Ziv discusses "soft" and "hard" handoffs, which occur *during* connected calls. Ziv does not disclose or suggest, e.g., dormant access terminals, "dormant" handoffs that occur when an access terminal is dormant and there is no traffic channel established with any radio network controller. The CDMA interconnect subsystem 26 disclosed by Ziv is a "simple packet router" and "does not add great expense or complexity to the system."[10] It is therefore not surprising that Ziv does not disclose or suggest the complexities involved with dormant access terminals in a wireless network.

Ziv discloses what happens when a base station controller fails and when a base station controller is over capacity.[11] Ziv is concerned with routing *connected calls*, and does not disclose or suggest *dormant* access terminals.

Ziv fails to disclose or suggest a first access terminal having a first session established on a first radio network controller when the first access terminal is dormant and does not have any traffic channel established with any radio network controller, as required by independent claims 36, 67, and 92.

The Examiner contends that a remote unit in Ziv can be considered dormant simply when it is not transmitting any user data: "a remote unit is considered dormant when it is currently not transmitting any user data."[12] Applicants respectfully disagree. Applicants' Specification discloses examples of dormant access terminals and dormant handoff. For example, a dormant access terminal, among other things, may monitor sector IDs broadcast by the sectors and may initiate a dormant handoff.[13] The Examiner is directed to the following parts from Applicants' Specification which clearly establish

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[10] *Id.*, at page 6, lines 5-13; Fig. 2.
[11] *Id.*, at page. 6, lines 20-30; page 6, line 31 to page 7, line 2.
[12] Office Action, dated September 16, 2008, at page 3.
[13] Applicants' Specification, at, e.g., page 3, lines 12-15.

that a dormant access terminal cannot be characterized simply as an "remote unit" that is not currently transmitting user data:[14]

> Every time a dormant AT crosses a subnet boundary, it initiates a dormant handoff by sending a UATI_Request. The AT recognizes the need for a dormant handoff by monitoring the 128-bit SectorID being broadcast by the sectors.
> ...
>
> While dormant, the AT sends RouteUpdate messages, as needed to provide information about its current location. This mobility information is maintained at a Mobility Manager in the serving RNC.
> ...
>
> If packet data is received from the PDSN for a dormant AT, the packets are always forwarded over the A10 interface to a specific server module on the serving RNC. That server module then obtains the location information for that AT from the Mobility Manager in the serving RNC. The serving RNC then sends a paging message via a set of RN's that are determined based on the last Route Update message received from the AT.
> ...
>
> When the AT crosses the boundary of an RNC cluster, it will detect a subnet change and initiate a dormant handoff between its serving RNC in the cluster and a new RNC outside the cluster. This handoff involves the assignment of a new UATI by the new RNC, the transfer of the IS-856 session from the old RNC to the new RNC and the relocation of the A10 interface from the old RNC to the new RNC.
>
> ...
>
> The AT is configured to provide distance-based location update in dormant mode. In other words, whenever the serving sector is more than a certain distance away from the sector where it last sent a RouteUpdate message, the AT sends a new RouteUpdate message to the serving sector over the Access Channel. The RouteUpdate message is forwarded by the RN to the serving RNC which then keeps track of the location of the AT.

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[14] *Id.*, at page 3, lines 12-15; page 13, lines 23-26; page 14, lines 15-21; page 16, lines 5-11; page 19, lines 14-20.

Further, even if it is construed, for the sake of argument, that an access terminal is dormant simply when it is not transmitting any user data (as the Examiner asserts), Ziv still fails to disclose or suggest establishing a session when the access terminal is dormant. The following example from Applicant's Specification shows how a new session may be established:

> When a new session is to be established, the serving RNC interacts with the Session Manager. The Session Manager provides the UATI to be assigned to the AT and stores the session parameters that the serving RNC has determined during the key exchange and configuration phases of the session set-up. Whenever the AT establishes a new connection with its serving RNC, the RNC retrieves the session information from the Session Manager. In the case where the Session Manager is integrated with the PCF, this can be accomplished during the A8/A9 connection set-up procedures. The RNC provides the latest session information back to the Session Manager when a connection is closed. [15]

Applicants' Specification further discloses an example dormant handoff of a session as follows:

> A second purpose of a dormant handoff is to transfer session information between RNC's. In IS-856, each RNC maintains certain session information about the AT. Such session information is needed for communication over the air interface. Session information includes the Universal Access Terminal Identifier (UATI), security keys for access channel authentication and encryption, and other protocol constants. Everytime the AT crosses an RNC boundary (in this case a subnet), a new UATI needs to be assigned to the AT and the remaining session information needs to be transferred from the old serving RNC to the new serving RNC. Such a transfer requires a network link between the RNC's. Without such session transfer, every handoff between RNC's would result in a new and lengthy session establishment, taking up precious air resources and causing delays.[16]

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[15] *Id.*, page 6, line 24 - page 7, line 7.
[16] *Id.*, page 4, lines 5-18.

Therefore, Ziv does not disclose or suggest a first access terminal having a first session established on a first radio network controller when the first access terminal is dormant and does not have any traffic channel established with any radio network controller, as required by independent claims 36, 67, and 92.

Thus, at least for the foregoing reasons, Ziv is not understood to disclose or suggest the subject matter of independent claims 36, 67 or 92. Other independent claims 79, 80, 93, 100, and 130 are patentable for at least similar reasons as at least one of claims 36, 67 and 92. Applicants therefore respectfully request reconsideration and withdrawal of these rejections.

Each of the dependent claims 17, 53, 68-69, 74, 78, 81, 87, 91, 94, 110, and 111 is patentable for at least the same reasons as its corresponding independent claim. Applicants therefore respectfully request reconsideration and withdrawal of these rejections.

In rejecting independent claims 97 and 129 as unpatentable under Ziv in view of Langberg, the Examiner stated that "Langberg et al. teaches a method for a transceiver warm start activation procedure can be implemented in software stored in a computer-readable medium."[17] Applicants, while not conceding the comments of the Examiner, note that Langberg does not cure the deficiencies of Ziv as regards, e.g., dormant access terminal(s).

For the foregoing reason and at least similar reasons as at least one of claims 36, 67, or 92, neither Ziv nor Langberg, alone or in combination, discloses or suggests the subject matter of independent claims 97 and 129, and there is no reason to combine these references to provide such subject matter. Applicants therefore respectfully request reconsideration and withdrawal of these rejections.

Each of the dependent claims 96 and 113 is patentable for at least the same reasons as its corresponding independent claim. Applicants therefore respectfully request reconsideration and withdrawal of these rejections.

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[17] Office Action, dated September 16, 2008, at page 15.

The Examiner made numerous other rejections of the remaining dependent claims, i.e., claims 8, 10-27, 35, 37-48, 50-52, 54-66, 70-73, 75-77, 83-86, 88-90, 92, 93, 95, 98, 99, 101-109, 112, 114-128, 131, and 132 all of which ultimately depend from one of the independent claims identified above. None of Ziv, Langberg, Yucebay, Abrol, Yahagi, the Official Notice, or the alleged admitted prior art, alone or in combination, disclose or suggest the subject matter of these claims, and there is no reason to combine any of these references to provide such subject matter. Each of the dependent claims 8, 10-27, 35, 37-48, 50-52, 54-66, 70-73, 75-77, 83-86, 88-90, 92, 93, 95, 98, 99, 101-109, 112, and 121-128, is patentable for at least the same reasons as its corresponding independent claim. Applicants therefore respectfully request reconsideration and withdrawal of these rejections.

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

Applicants believe the application is in condition for allowance, which action is respectfully requested.

Please apply any charges or credits to Deposit Account No. 06-1050, referencing attorney docket no. 12144-0007001.

Respectfully submitted,

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